

**REMARKS**

Claims 1, 3-7, and 15-31 are pending in the current application. Of those claims 1 and 18-21 are independent claims. No claims are amended, canceled, or added by this Response.

**Telephone Interview**

Applicant notes with appreciation the telephone interview conducted on January 18, 2008 with Examiner Tat Chi Chio. Applicant thanks the Examiner for his time and for his indication that he would reconsider Applicant's arguments in light of the remarks contained herein.

**Claim Rejections – 35 U.S.C. § 101**

Claims 1, 3-7, and 15-17 stand rejected under 35 U.S.C. § 101 because the Examiner alleges the claims are directed to non-statutory subject matter. In particular, the Examiner asserts that claims 1, 3-7, and 15-17 recite a computer readable medium which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is this non-statutory per se. Applicant respectfully traverses this rejection.

The Examiner appears to be under the mistaken impression that only computer programs recorded on a computer readable medium constitute statutory subject matter. This is simply incorrect. In particular, Applicant notes that the Examiner seemed to insist in the above noted interview that a claim must include language similar to "computer executable code" in order to constitute statutory subject matter. This is also simply incorrect.

MPEP § 2106.01 states the following:

In this context, “functional descriptive material” consists of **data structures** and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5<sup>th</sup> ed. 1993).) “Nonfunctional descriptive material” includes but is not limited music, literary works and a compilation or mere arrangement of data.

(emphasis added)

Data structures recorded on a computer readable medium may constitute statutory subject matter.

MPEP § 2106.01 goes on further to state:

Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, [In re Warmerdam,] 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (discussing patentable weight of data structure limitations in the context of a statutory claim to a data structure stored on a computer readable medium that increases computer efficiency) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory).

In view of the above, a more detailed discussion of In re Warmerdam and In re Lowry is warranted.

#### *Discussion of In re Warmerdam*

Claim 1 of In re Warmerdam recited:

1. A method for generating a data structure which represents the shape of [sic] physical object in a position and/or motion control machine as a hierarchy of bubbles, comprising the steps of:

first locating the medial axis of the object and

then creating a hierarchy of bubbles on the medial axis.

Claim 6 of In re Warmerdam recited:

6. A data structure generated by the method of any of Claims 1 through 4.

With respect to claim 1, the court found both steps drawn strictly to mathematical equations, and therefore non-statutory abstract ideas. In re Warmerdam, at 1759. The court went on to find that the data structure of claim 6 suffered from the same defect.

*Discussion of In re Lowry*

Claim 1 of In re Lowry recited:

1. A memory for storing data for access by an application program being executed on a data processing system, comprising:

a data structure stored in said memory, said data structure including information resident in a database used by said application program and including:

a plurality of attribute data objects stored in said memory, each of said attribute data objects containing different information from said database;

a single holder attribute data object for each of said attribute data objects, each of said holder attribute data objects being one of said plurality of attribute data objects, a being-held relationship existing between each attribute data object and its holder attribute data object, and each of said attribute data objects having a being-held relationship with only a single other attribute data object, thereby establishing a hierarchy of said plurality of attribute data objects;

a referent attribute data object for at least one of said attribute data objects, said referent attribute data object being nonhierarchically related to a holder attribute data object for the same at least one of said attribute data objects and also being one of said plurality of attribute data objects, attribute data objects for which there exist only holder attribute data objects being called element data objects, and attribute data objects for which there also exist referent attribute data objects being called relation data objects; and

an apex data object stored in said memory and having no being-held relationship with any of said attribute data objects, however, at least one of said attribute data objects having a being-held relationship with said apex data object.

In finding that the printed matter cases have no factual relevance to the claims at issue in In re Lowry, the court stated:

Nor are the data structures analogous to printed matter. Lowry's ADOs do not represent merely underlying data in a database. ADOs contain both information used by application programs and information regarding their physical interrelationships within a memory. Lowry's claims dictate how application programs manage

information. Thus, Lowry's claims define functional characteristics of the memory.

In re Lowry, at 1034.

The court further noted:

Indeed, Lowry does not seek to patent the Attributive data model in the abstract. Nor does he seek to patent the content of information resident in a database. Rather, Lowry's data structures impose a physical organization on the data.

In re Lowry, at 1034.

And, on the issue of abstract ideas, the Federal Circuit in In re Lowry noted:

More than mere abstraction, the data structures are specific electrical or magnetic structural elements in a memory. According to Lowry, the data structures provide tangible benefits: data stored in accordance with the claimed data structures are more easily accessed, stored, and erased. Lowry further notes that, unlike prior art data structures, Lowry's data structures simultaneously represent complex data accurately and enable powerful nested operations. In short, Lowry's data structures are physical entities that provide increased efficiency in computer operation.

In re Lowry, at 1035.

The claims at issue (e.g., claim 1) are analogous to the claims in In re Lowry, and as such are clearly statutory subject matter. Unlike the claims of In re Warmerdam, the claims of the subject application do not recite mathematical equations, or the generation of data structures using mathematical equations. Instead, as in In re Lowry, claim 1 recites a computer readable medium storing a specific data structure that dictates how application programs reproduce data. Accordingly, because the computer readable medium recited in claim 1 includes a data structure having a management area, which provides path change information for managing reproduction of video data recorded on the computer readable medium, claim 1 is clearly directed towards patentable, statutory subject matter.

Applicant again respectfully submits that the Examiner is mistaken in his assertion that that only computer programs recorded on a computer readable medium constitute statutory subject matter. As may be seen from the above discussion of In re Lowry, **nowhere does the Federal Circuit require a claim to be directed to a computer program recorded**

**on a computer readable medium in order to constitute statutory subject matter.** To the contrary, In re Lowry defines a data structure as functional descriptive material if the data structure imposes a physical organization on the data. In particular, In re Lowry clearly states that the data structures themselves provide tangible benefits.

Applicant notes that the Examiner seemed concerned that claim 1 of In re Lowry included the recitation “for access by an application program being executed...” Applicant respectfully submits that claim 1 in In re Lowry is not directed to the application program. To the contrary, the claim is directed to a memory containing a stored data structure. In particular, the application program is not an element of the claim, does not constitute a field of use limitation, and does not change the meaning of the claim. Stated another way, the language concerning the application program in claim 1 of In re Lowry could be deleted from the claim, and the claim would still be statutory subject matter under the reasoning of the Federal Circuit.

In the language of MPEP §2106.01 regarding **functional** descriptive material, claim 1 is directed to “a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.”

In view of the above, Applicant respectfully requests the rejections under 35 U.S.C. § 101 be withdrawn.

#### **Claim Rejections – 35 U.S.C. § 103**

Claims 1, 3-7, and 15-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of Sawabe et al. (US 6,031,962, hereinafter Sawabe). Applicants respectfully traverse this art grounds of rejection.

As recognized by the Examiner at page 4 of the current Office Action, Sato fails to disclose or suggest “one or more management areas storing path change information,...the

one or more management areas being separate from a data area storing the video data; and wherein the path change information includes at least one entry point map associated with each reproduction path, each entry point map identifying entry points in the video data for the associated reproduction path including at least one flag, each flag associated with an entry point and identifying whether a change in reproduction path is permitted in relation to the entry point” as required by claim 1. Instead, the Examiner relies on Sawabe as disclosing these features.

Sawabe discloses at FIG. 6 and col. 11, lines 14-18 “[a]s shown in FIG. 6, each of the interleaved units has a navi-pack, and in this navi-pack, there are recorded an end address of the interleaved unit and a start address of the other interleaved unit to be read out next.” Therefore, the navigation information in Sawabe is dispersed in the interleave structure along with the video objects. FIG. 7 further illustrates that the navi-packs including addresses A are interleaved with video data. Accordingly, Applicant respectfully submits that Sawabe fails to disclose “one or more management areas storing path change information,... **the one or more management areas being separate from a data area storing the video data**; and wherein the path change information includes at least one entry point map associated with each reproduction path, **each entry point map identifying entry points in the video data for the associated reproduction path including at least one flag**, each flag associated with an entry point and identifying whether a change in reproduction path is permitted in relation to the entry point” as required by claim 1.

Applicant recognizes that Sawabe, as was discussed in the above noted interview, discloses at FIG. 1 a video manager 2. However, Sawabe only discloses at col. 5, lines 61-67 that “As the information recorded in the video manager 2, for example, information related to the whole video and audio information recorded on the DVD 1, such as a menu showing names of the respective titles, information for preventing an illegal copy, an access table for accessing each title and so on, is recorded.” Therefore, the video manager 2 clearly does not

store “one or more management areas storing path change information,...the one or more management areas being separate from a data area storing the video data; and wherein the path change information includes at least one entry point map associated with each reproduction path, each entry point map identifying entry points in the video data for the associated reproduction path including at least one flag, each flag associated with an entry point and identifying whether a change in reproduction path is permitted in relation to the entry point” as required by claim 1. Further, Applicant notes that the navi-packs as illustrated in FIG. 6 of Sawabe are clearly not stored in the video manager 2. To the contrary, the navi-packs are dispersed in the interleave structure along with the video objects.

Therefore, even assuming for the sake of argument Sato and Sawabe are properly combinable (which Applicant does not admit), Sato in view of Sawabe cannot disclose or suggest these limitations of claim 1. Claim 1 is not rendered obvious to one skilled in the art by Sato in view of Sawabe.

Accordingly, claim 1 is patentable for at least the above reasons. Claims 18-21 contain features somewhat similar to those discussed above in regards to claim 1, and therefore, claims 18-21 are patentable for at least somewhat similar reasons as claim 1. Claims 2-7, 15-17, and 22-31 dependent upon one of claims 1 and 18-21, are patentable for at least the reasons stated above with respect to claims 1 and 18-21 as well as on their own merits.

In view of the above, Applicant respectfully requests the rejections under 35 U.S.C. § 103(a) be withdrawn.

### **CONCLUSION**

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of the claims in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Gary D. Yacura at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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